

IN THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A semiconductor laser, comprising:
a substrate etched into a mesa structure;
an active layer formed directly on the mesa structure and being a core of a waveguide;
a first clad layer formed on the active layer;
a current blocking layer formed on the etched substrate in both sides of the mesa structure;
an etch-stop layer formed on the first clad layer and the current blocking layer;
a second clad layer formed on the etch-stop layer being located on an upper portion of the mesa structure, with a predetermined width;
an ohmic contact layer formed on the second clad layer;
a first electrode contacted with the ohmic contact layer; and
a second electrode formed on a bottom side of the substrate,
wherein the current blocking layer may be formed by a first p type, an n type, and a second p type semiconductor layers.
2. (Canceled).
3. (Currently Amended) The semiconductor laser as claimed in Claim 2 1, wherein the second p type semiconductor layer is formed with a thickness of 0.2 μm or less.
4. (Original) The semiconductor laser as claimed in Claim 1, wherein the second clad layer may be a p type semiconductor layer.
5. (Original) The semiconductor laser as claimed in Claim 1, further comprising a layer for planarization in both sides of the second clad layer and the ohmic contact layer.
- 6-9. (Cancelled)

10. (Previously Presented) A semiconductor laser, comprising:
a substrate etched into a mesa structure;
an active layer formed on the mesa structure and being a core of a waveguide;
a first clad layer formed on the active layer;
a current blocking layer formed on the etched substrate in both sides of the mesa structure;
an etch-stop layer formed on the first clad layer and the current blocking layer;
a second clad layer formed on the etch-stop layer being located on an upper portion of the mesa structure, with a predetermined width;
an ohmic contact layer formed on the second clad layer;
a first electrode contacted with the ohmic contact layer; and
a second electrode formed on a bottom side of the substrate;
wherein the current blocking layer may be formed by a first p type, an n type, and a second p type semiconductor layers, and
wherein the second p type semiconductor layer is formed with a thickness thinner than that of the first p type semiconductor layer.

11. (Cancelled)

12. (Previously Presented) The semiconductor laser as claimed in Claim 10, wherein the second clad layer may be a p type semiconductor layer.

13. (Previously Presented) The semiconductor laser as claimed in Claim 10, further comprising a layer for planarization in both sides of the second clad layer and the ohmic contact layer.

14. (Previously Presented) A semiconductor laser, comprising:
a substrate etched into a mesa structure;
an active layer formed on the mesa structure and being a core of a waveguide;
a first clad layer formed on the active layer;
a current blocking layer formed on the etched substrate in both sides of the mesa structure;
an etch-stop layer formed on the first clad layer and the current blocking layer;

a second clad layer formed on the etch-stop layer being located on an upper portion of the mesa structure, with a predetermined width;

an ohmic contact layer formed on the second clad layer;

a first electrode contacted with the ohmic contact layer; and

a second electrode formed on a bottom side of the substrate;

wherein the current blocking layer may be formed by a first p type, an n type, and a second p type semiconductor layers;

wherein the second p type semiconductor layer is formed with a thickness thinner than that of the first p type semiconductor layer; and

wherein the second p type semiconductor layer is formed with a thickness of 0.2 μm or less.

15. (Previously Presented) The semiconductor laser as claimed in Claim 14, wherein the second clad layer may be a p type semiconductor layer.

16. (Previously Presented) The semiconductor laser as claimed in Claim 14, further comprising a layer for planarization in both sides of the second clad layer and the ohmic contact layer.